

REMARKS/ARGUMENTS

The claims are amended to clarify that in step (I) the slurry is provided in a substantially homogeneous phase. Meanwhile, in step (III), it is clarified that the method involves preserving the slurry against bacterial contamination, whilst avoiding instantaneous heterogeneous thickening of the slurry due to the THP⁺ salt, provided in a substantially homogeneous phase.

These features are in accordance with the original disclosure, e.g., at page 1.

The Examiner rejected the claims as obvious from USP 6,402,824 (Freeman) in combination with WO 00/04777 (Ajoku). The Examiner also rejected claims 23 to 25 as obvious in view of USP 3,336,221 (Ralston) in combination with Freeman and Ajoku. Claim 35 is rejected over Freeman and Ajoku and further over Ralston. Claim 38 is rejected over Freeman and Ajoku.

Freeman teaches that organic dispersants, such as polycarboxylates, can be used in calcium carbonate compositions to allow dewatering to 70-80% solids.

Ajoku teaches that THPS, THPP and THPC are antimicrobial and can each be used in combination with peracetic acid to provide a synergistic antimicrobial combination, and specifically mentions this use in relation to clay and pigment slurries, such as calcium carbonate slurries.

Ralston teaches that certain phosphonated compounds containing a tertiary nitrogen atom are known dispersants.

However, it would not have been obvious, when considering the state of the art as at the filing date of the invention, to use a THP salt together with a dispersant of the type required by the claims in an inorganic slurry.

Firstly, it was not expected that THP salts would cause flocculation of slurries that were previously homogeneous. Therefore there was no reason for one to consider including a dispersant when adding THP salts to a homogeneous slurry to achieve a biocidal effect. This would incur an unnecessary expense.

In other words, part of the invention is the recognition that a dispersant is actually needed when THP salts are used as the biocide, because there is an unexpected flocculation effect.

In the prior art, there was no motivation to include a dispersant with a THP salt when the THP salt was used as a biocide. There was no recognition that a THP salt might cause a flocculation problem. Thus, when presented with a homogeneous slurry that required a biocidal treatment, the skilled person would think he should simply add a biocide, such as a THP salt. He would not realize that if he did select a THP salt as his biocide, this would cause his previously homogenous slurry to flocculate.

Secondly, once this recognition of the problem associated with using THP salts in homogeneous inorganic slurries had been achieved, it was then surprisingly recognized by the present inventor that generic dispersants would not necessarily control the unexpected flocculation. In fact, many known dispersants made the flocculation problem worse.

Only a specific group of dispersants were successful in preventing the flocculation of previously homogenous slurries in the presence of THPS. The present claims reflect the fact that only certain dispersants are successful.

Therefore the invention involved recognition of several non obvious issues that are in no way taught or suggested in the art. Without having the knowledge imparted by the claimed invention there was no motivation for one to make the combination that the Examiner suggests, with hindsight, is obvious.

The nature of the invention and why it is non-obvious is discussed further in the attached two Declarations.

In the Declaration by Stephanie Edmunds annexed hereto, there is reported the experimental evidence which evidences the discussions above that the addition of THPS to a homogeneous calcium carbonate slurry causes flocculation and a loss of homogeneity. Out of the three known dispersants tested in combination with THPS, only the sodium salt of nitrilo-tris(methylene phosphonate) genuinely countered this effect. The sodium salt of nitrilo-tris(methylene phosphonate), of course,

falls within the present claim scope.

Therefore it is submitted that there is a surprising technical effect associated with only certain dispersants, in that the dispersants have been found to counter the previously unrecognized problem of flocculation and loss of homogeneity caused when homogeneous inorganic slurries are exposed to THP salts.

Therefore the claimed invention provides a method to form a homogeneous inorganic slurry treated with a THP salt to preserve the slurry against bacterial contamination, whilst avoiding heterogeneous thickening of the slurry due to the THP salt.

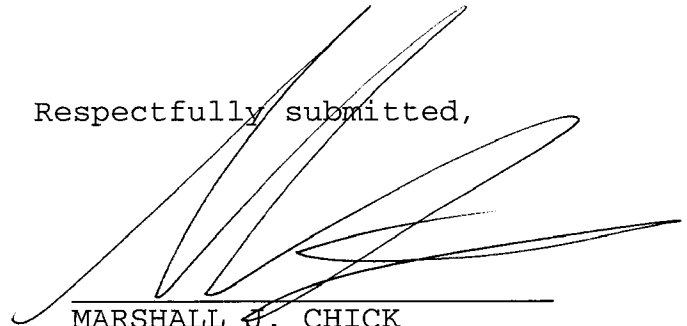
In view of the above, it is submitted that the present invention is not shown or suggested by the art, alone or in combination.

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Allowance of the application is therefore respectfully
requested.

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Encs.: (1) DECLARATION UNDER 37 CFR 1.132
dated December 8, 2010 (4 pages)

(2) DECLARATION UNDER 37 CFR 1.132
Dated October 12, 2010 (5 pages)